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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/824,141	04/14/2004	Kenneth D. White	72851	6380
27975	7590	06/15/2006	EXAMINER	
ALLEN, DYER, DOPPELT, MILBRATH & GILCHRIST P.A. 1401 CITRUS CENTER 255 SOUTH ORANGE AVENUE P.O. BOX 3791 ORLANDO, FL 32802-3791			ROJAS, OMAR R	
			ART UNIT	PAPER NUMBER
			2874	

DATE MAILED: 06/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/824,141

Applicant(s)

WHITE ET AL.

Examiner

Omar Rojas

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 8, 9, 19, 20, 22, 23, 25 and 28 is/are rejected.
- 7) ☒ Claim(s) 4, 6, 7, 10-18, 21, 24, 26 and 27 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on July 12, 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 0404.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☒ Other: Detailed Action.

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The prior art documents submitted by Applicant(s) in the Information Disclosure Statement(s) ("IDS") filed on April 4, 2004 have all been considered and made of record (note the attached copy of form(s) PTO-1449):

### ***Specification***

2. The disclosure is objected to because of the following informalities: On page 15, paragraph [042], reference numeral "41" appears to be a typographical error since there is no reference numeral 41 shown in the drawings.

Appropriate correction is required.

3. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The term "optical waveguide retention element" (claim 7) is not found in the specification.

4. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### ***Claim Objections***

5. Claim 1 is objected to because of the following informalities: In claim 1, it is unclear whether the "optical relay element" and the "optical waveguide" are separate structures or refer to the same structure. This is because the specification states the optical relay element and the

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optical waveguide may both comprise a fiber rod. Furthermore, the specification does not indicate that the optical relay element and the optical waveguide are useable together in the same device. Therefore, claim 1 is unnecessarily vague. Appropriate correction is required.

6. For purposes of this examination, the Examiner has assumed that the "optical relay element" and the "optical waveguide" recited by claim 1 refer to the same structure.

7. Claim 9 is objected to because of the following informalities: In claim 9, the limitation "said light relay element" lacks a clear antecedent basis. Appropriate correction is required.

8. Claim 19 is objected to because of the following informalities: Claim 19 appears to contain typographical error(s) at line 7. Appropriate correction is required.

9. Claim 25 is objected to because of the following informalities: Claim 25 appears to contain typographical error(s) at line 7. Appropriate correction is required.

10. Claim 28 objected to because of the following informalities: Claim 28 is written so as to be dependent upon itself. Appropriate correction is required.

11. For purposes of this examination, the Examiner has assumed that claim 28 is dependent on claim 25.

***Claim Rejections - 35 USC § 103***

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

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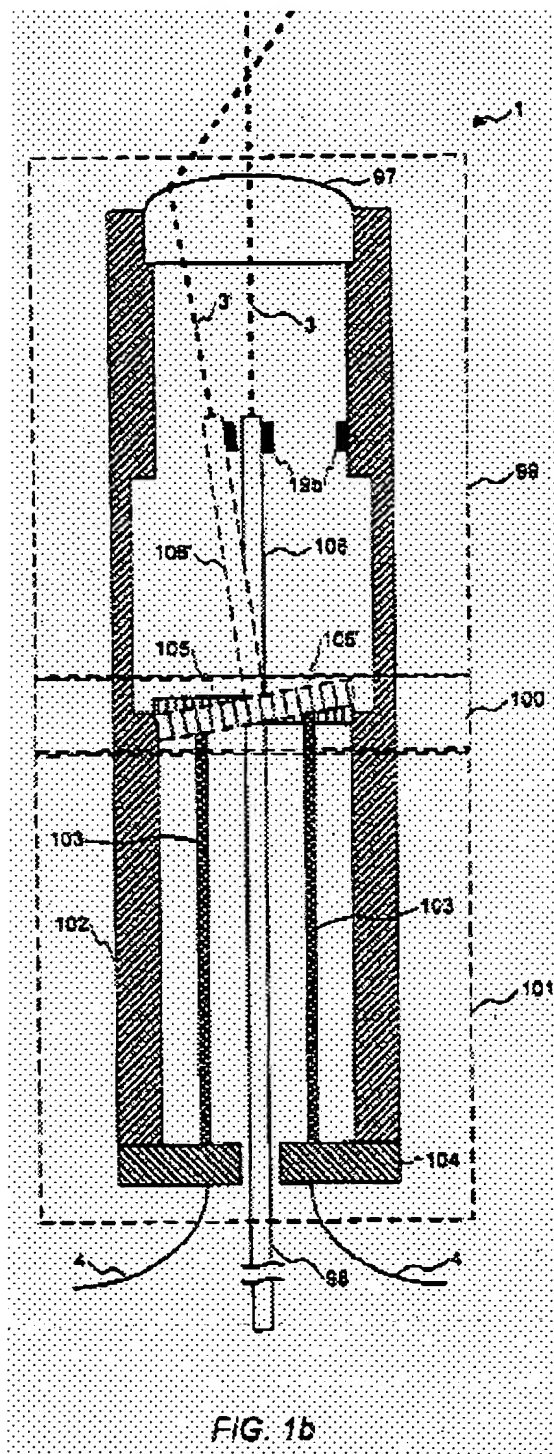
claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**14. Claims 1-3, 5, 8, 9, 19, 20, 22, 23, 25, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Patent No. US 6,975,785 B2 to Ghandi et al. ("Ghandi") in view of Patent No. 6,137,103 to Giles et al. ("Giles").**

*In re* claims 1-3, 19, and 25 Ghandi discloses an optical antenna 1 for interfacing a light beam 3 with an optical aperture comprising:

a light directing element 97 having an optical axis fixedly mounted at a first location of said optical antenna, and being operative to focus said light beam incident thereon onto an optical relay element 106 coupled with said optical aperture;

and an optical waveguide 106 passing through a controllably orientable support structure/control arm/support tube 105 that is mounted at a second location of said optical antenna 1, so that an end of said optical waveguide 106 is coupled with said optical aperture, said controllably orientable support structure 105 being anchored to a plurality of anchoring locations by respective actuators 103 for adjusting the orientation of said controllably orientable structure 105 relative to said optical axis of said light directing element 97, and thereby defining deflection of said optical waveguide 106 relative to said optical axis of said light directing element. Fig. 1b of Ghandi is reproduced below.



*In re* claims 5, 19, and 25, Ghandi shows a housing/cartridge 102 having a first portion at which

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said light directing element is fixedly mounted, and a second portion at which said controllably orientable support structure 105 is mounted.

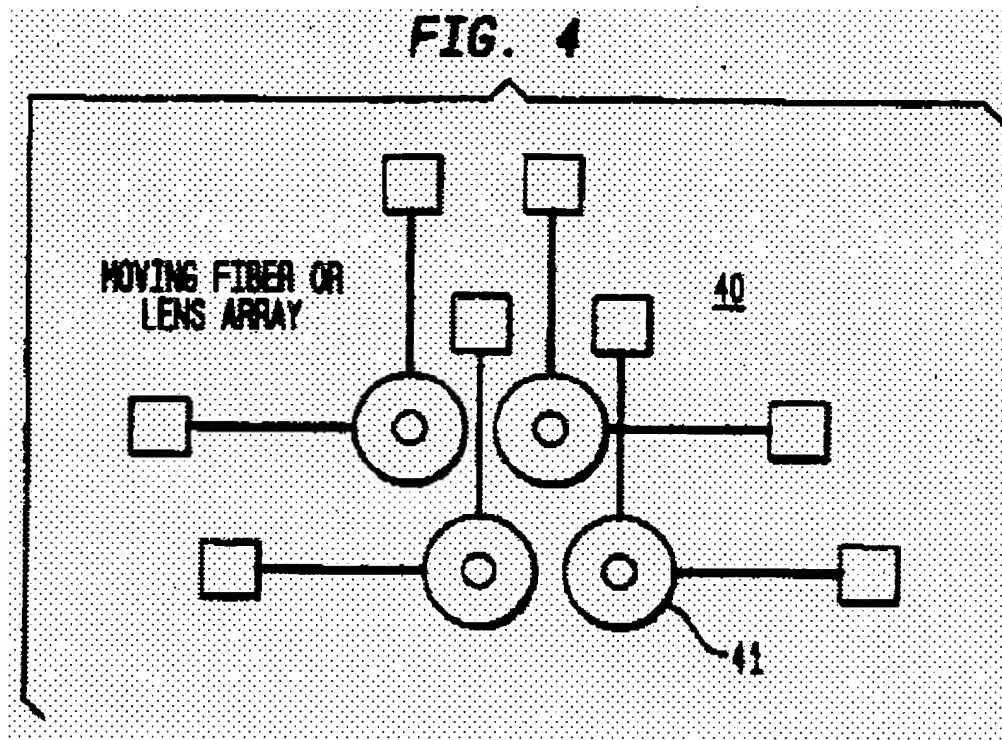
*In re* claims 8 and 22, waveguide/relay element 106 is an optical fiber rod.

*In re* claims 9, 20, and 28, the aiming position of said optical relay element 106 may be continuously adjusted, as necessary, to cause said optical antenna 1 to effectively track a received light beam 3. See Ghandi at col. 7, lines 29-65.

*In re* claim 23, the fiber rod 106 passes through support structure/control arm 105 and simultaneously moves off-axis with it.

Thus, Ghandi only differs from claims 1-3, 5, 8, 9, 19, 20, 22, 23, 25, and 28 in that Ghandi does not disclose that his actuators 103 comprise actuator wires that change length and that the actuator wires are anchored in such a way that they are essentially perpendicular to each other as specifically mentioned by claims 1, 3, 4, 19, and/or 25.

Giles, on the other hand, teaches the use of actuator wires that change length and that may be configured perpendicular to each other so as to allow 2-dimensional movement of an optical fiber waveguide or a lens. See Giles at column 3, lines 1-25. Figure 4 of Giles is reproduced below.



The motivation(s) for combining the actuator wires of Giles with Ghandi are myriad (low current consumption, fast, reliable control, etc.). See col. 1, lines 32-39 of Giles. Therefore, it would have been obvious to one of ordinary skill at the time of the claimed invention to obtain the invention specified by claims 1-3, 5, 8, 9, 19, 20, 22, 23, 25, and 28 in view of Ghandi modified by Giles.

***Allowable Subject Matter***

15. Claims 4, 6, 7, 10-18, 21, 24, and 26-27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

16. The following is a statement of reasons for the indication of allowable subject matter:

Each of claims 4, 6, 7, 10-18, 21, 24, and 26-27 include a particular feature that is considered novel and unobvious over the prior art of record. Neither Ghandi nor Giles discloses:



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- a biasing element as recited by claim 4;
- a control arm and flexure as included in claims 6-7;
- inner and outer ring members as included in claims 10-18;
- a pan/tilt mount as recited by claims 21 and 26;
- a section of syringe needle tubing retained by a connector as recited by claim 24;
- a pair of inner and outer rings and a set of C-flex type bearing joints as recited by claim 27.

It is further the position of this Examiner that it would not have been obvious to combine any of the aforementioned features with Ghandi in view of Giles, absent Applicant's own teachings.

#### ***Conclusion***

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The additional references listed on the attached Form PTO-892 disclose optical devices that use shape-memory alloys to move either a lens or an optical waveguide.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Omar Rojas whose telephone number is (571) 272-2357. The examiner can normally be reached on Monday-Friday (12:00PM-8:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rod Bovernick, can be reached on (571) 272-2344. The official facsimile number for regular and After Final communications is (571) 273-8300. The examiner's RightFAX number is (571) 273-2357.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

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may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Omar Rojas  
Patent Examiner  
Art Unit 2874

or  
June 5, 2006



AKM ENAYET ULLAH  
PRIMARY EXAMINER